



THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

A Critical Evaluation of Bail-in as a Bank Recapitalisation Mechanism

Citation for published version:

Avgouleas, E & Goodhart, C 2014 'A Critical Evaluation of Bail-in as a Bank Recapitalisation Mechanism' Centre for Economic Policy Research Discussion Paper, no. 10065, Centre for Economic Policy Research. <http://www.cepr.org/active/publications/discussion_papers/dp.php?dpno=10065>

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Publisher's PDF, also known as Version of record

Publisher Rights Statement:

© Avgouleas, E., & Goodhart, C. (2014). A Critical Evaluation of Bail-in as a Bank Recapitalisation Mechanism. (Centre for Economic Policy Research Discussion Paper; No. 10065). Centre for Economic Policy Research.

General rights

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact openaccess@ed.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.



DISCUSSION PAPER SERIES

No. 10065

A CRITICAL EVALUATION OF BAIL-IN AS A BANK RECAPITALISATION MECHANISM

Emilios Avgouleas and Charles A Goodhart

INTERNATIONAL MACROECONOMICS



Centre for Economic Policy Research

www.cepr.org

Available online at:

www.cepr.org/pubs/dps/DP10065.php

A CRITICAL EVALUATION OF BAIL-IN AS A BANK RECAPITALISATION MECHANISM

Emilios Avgouleas, University of Edinburgh
Charles A Goodhart, London School of Economics

Discussion Paper No. 10065
July 2014

Centre for Economic Policy Research
77 Bastwick Street, London EC1V 3PZ, UK
Tel: (44 20) 7183 8801, Fax: (44 20) 7183 8820
Email: cepr@cepr.org, Website: www.cepr.org

This Discussion Paper is issued under the auspices of the Centre's research programme in **INTERNATIONAL MACROECONOMICS**. Any opinions expressed here are those of the author(s) and not those of the Centre for Economic Policy Research. Research disseminated by CEPR may include views on policy, but the Centre itself takes no institutional policy positions.

The Centre for Economic Policy Research was established in 1983 as an educational charity, to promote independent analysis and public discussion of open economies and the relations among them. It is pluralist and non-partisan, bringing economic research to bear on the analysis of medium- and long-run policy questions.

These Discussion Papers often represent preliminary or incomplete work, circulated to encourage discussion and comment. Citation and use of such a paper should take account of its provisional character.

Copyright: Emilios Avgouleas and Charles A Goodhart

July 2014

ABSTRACT

A Critical Evaluation of Bail-in as a Bank Recapitalisation Mechanism*

Many of the world's developed economies have introduced, or are planning to introduce, bank bail-in regimes. Both the planned EU resolution regime and the European Stability Mechanism Treaty involve the participation of bank creditors in bearing the costs of bank recapitalization via the bail-in process as one of the (main) mechanisms for restoring a failing bank to health. There is a long list of actual or hypothetical advantages attached to bail-in centred bank recapitalizations. Most importantly the bail-in tool involves replacing the implicit public guarantee, on which fractional reserve banking has operated, with a system of private penalties. The bail-in tool may, indeed, be much superior in the case of idiosyncratic failure. Nonetheless, there is need for a closer examination of the bail-in process, if it is to become a successful substitute to the unpopular bailout approach. This paper discusses some of its key potential shortcomings. It explains why bail-in regimes will fail to eradicate the need for an injection of public funds where there is a threat of systemic collapse, because a number of banks have simultaneously entered into difficulties, or in the event of the failure of a large complex cross-border bank, except in those cases where failure was clearly idiosyncratic.

JEL Classification: G18, G28, K20 and L51

Keywords: bail-in, bank recapitalisation, bank regulation, creditor flight and moral hazard

Emilios Avgouleas
School of Law
University of Edinburgh
Old College, South Bridge
Edinburgh EH8 9YL

Charles A Goodhart
Financial Markets Group
London School of Economics
Houghton Street
Aldwych
London WC2A 2AE

Email: eavgoule@exseed.ed.ac.uk

Email: caegoodhart@aol.com

For further Discussion Papers by this author see:
www.cepr.org/pubs/new-dps/dplist.asp?authorid=159298

For further Discussion Papers by this author see:
www.cepr.org/pubs/new-dps/dplist.asp?authorid=100267

*The authors would like to thank for constructive comments Dirk Bliesener, Martin Hellwig, Thomas Mayer, Stefano Micossi, Maria Nieto, Huw Pill, and the participants of two research workshops at the LSE and EUI. We also thank several present and past officials from regulatory authorities who have helped to clarify the current situation for us, and have rectified certain errors. All remaining errors, however, are our own responsibility.

Submitted 02 July 2014

A Critical Evaluation of Bail-in as a Bank Recapitalisation Mechanism

A. Introductory Remarks

The scale of losses flowing from bank failures is initially independent of the identity of those upon whom the burden of meeting that loss falls. But, such losses also can then entail critical externalities. These have traditionally justified the public bailouts to avoid the systemic threat that the failure of any bank beyond a certain size carries with it.

Nevertheless, public bailouts of banks are a source of moral hazard and they undermine market discipline. One of the key principles of a free market economy is that owners and creditors are supposed to bear the losses of a failed venture. Bailouts can also have a destabilizing impact on public finances and sovereign debt, with UK and Irish finances being held as illustrative examples of the impact of such costs.¹

These concerns have given rise to reforms to internalize the costs of bank failure of which the foremost is the drawing up of bank creditor bail-ins. Essentially, bail-in constitutes a radical rethinking of who bears the ultimate costs of the operation of fractional reserve banking.

A great momentum has built up for basing resolution on bail-in, which sometimes resembles a ‘chorus’ (wording used in McAndrews, et al, (2014), p. 14). The regulatory authorities in most of the world’s developed economies have developed, or are in the process of developing, resolution regimes that allow, in principle, banks to fail without resorting to public funding.

The bail-in approach is intended to counter the dual threat of systemic disruption and sovereign over-indebtedness. It is based on the penalty principle, namely, that the costs of bank failures are shifted to where they best belong: bank shareholders and creditors. Namely, bail-in replaces the public subsidy with private penalty (Huertas, 2013) or with private insurance (KPMG, 2012; Gordon, Ringe, 2014) forcing banks to internalize the cost of risks which they assume.

In these new schemes, apart from the shareholders, the losses of bank failure are to be borne by ex ante (or ex post) funded resolution funds, financed by industry levies, and certain classes of bank creditors whose fixed debt claims on the bank will be converted to equity, thereby restoring the equity buffer needed for on-going bank operation.

This is an important development, since in the past banks’ subordinated debt did not provide any cover when bank liquidation was not an option, which meant that subordinated creditors were bailed out alongside senior creditors by taxpayers (Gleeson, 2012). This led to creditor inertia.

¹ This is a nearly undisputable argument against bailouts and is fully endorsed in this paper. However, bailout costs cannot be accurately measured unless the costs of the alternative: instability are also counted (Dewatripont, 2014).

Turning unsecured debt into bail-in-able debt should incentivize creditors to resume a monitoring function, thereby helping to restore market discipline. For example, as the potential costs of bank failure would fall on creditors, in addition to shareholders, such creditors should become more alert about the levels of leverage the bank carries (Coffee, 2011), limiting one of the most likely causes of bank failures and the governance costs associated with excessive leverage (Admati et al. 2013; Avgouleas and Cullen, 2014b). Normally, shareholders have every incentive to build leverage to maximize their return on equity (Admati et al. 2012; Avgouleas and Cullen 2014a).

Such monitoring might, in turn, reduce the scale of loss in the event of a bank failure: creditors could force the bank to behave more cautiously, especially where the bail-in regime allows for earlier intervention and closure than a bail-out mechanism. It should also, in principle, eliminate the ‘too-big-to-fail’ subsidy enjoyed by bigger banks.

Essentially, bail-in provisions mean that, to a certain extent, a pre-planned contract replaces the bankruptcy process giving greater certainty (Coffee, 2011) as regards the sufficiency of funds to cover bank losses and facilitating early recapitalisation. Moreover, the bail-in tool can be used to keep the bank as a going concern and avoid disruptive liquidation or dis-membering of the financial institution in distress.

But the idea that the penalty for failure can be shifted onto an institution, such as a bank, is incorrect. Ultimately all penalties, and similarly benefits, have to be absorbed by individuals, not inanimate institutions. When it is said that the bank will pay the penalty of failure, this essentially means that the penalty is paid, in the guise of worsened terms, by bank managers, bank staff, bank creditors or borrowers. The real question is which individuals will be asked to absorb the cost.

The goals of the bail-in process are not the same in every jurisdiction. In the United States the process through which bail-in and subsequent conversion of creditor claims takes place for SIFIs is imbedded in the mechanics and architecture of the resolution process that is applied to systemically important institutions, the so-called Orderly Liquidation Authority (OLA) of Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. This means that triggering the bail-in process under Title II aims at providing with sufficient capital the entities that will emerge following liquidation of the resolved parent institution (see section B below).

In the European Union, on the other hand, the doom-loop between bank instability and sovereign indebtedness has left Eurozone governments with a major conundrum. The traditional route of a public bailout is increasingly ruled out, not only due to a principled adherence to the avoidance of moral hazard, but also due to its potential impact on already heavily indebted countries. To answer this challenge, the Eurozone has established the European Stability Mechanism (ESM) to act, amongst other purposes, as an essential component of the European Banking Union (EBU). Both the ESM statute and the new EU Resolution regime based on the forthcoming EU Bank Recovery and Resolution Directive (BRRD) require the prior participation of bank creditors in meeting the costs of bank resolution. This means that either the bank remains a going concern and the bail-in process is triggered to effect bank recapitalization to restore it to health (“open bank” bail-in process) or in conjunction

with the exercise of resolution powers treating the bank as gone concern (“closed bank” bail-in process). This contrasts with DFA’s approach to SIFI resolution, discussed in section B(1) below, where only the second approach is used. This bifurcation is likely to prove problematic.²

Similarly, the intention is that intervention will be sooner (forbearance less), so that losses will be less, but whether that hope will be justified is yet to be seen. We discuss this further in section C below.

The desire to find an effective way to replace the public subsidy and the unpopular bailout process is entirely understandable and can lead to welfare enhancing outcomes. At the same, time, there is a danger of over-reliance on bail-ins, in part owing to the growing momentum for its introduction. One useful role for an academic is to query contemporary enthusiasm for fear of group-think, which the last crisis has shown may prove a dangerous aspect of policy-making in the financial sector. In placing bail-in at the heart of bank resolution regimes, legislators and regulatory authorities ought not to overlook some important shortcomings attached to this approach. This paper sets out to discuss these shortcomings and to explain why, arguably, bail-in regimes will not remove, in the case of resolution of a large complex cross-border bank, (unless the risk is idiosyncratic, for example fraud), or in the event of a systemic crisis, the need for public injection of funds. In our analysis we particularly focus on BRRD’s distinction between the resolution of banks that have become bankrupt (“gone concern”), from the recapitalization (also as part of the resolution regime) of banks that have become so fragile as to need intervention and recapitalization, but are not (yet) bankrupt, (“going concern”). Although this distinction is hallowed in the literature, we argue that it may be less clear-cut in practice than is sometimes suggested.

B. The Architecture of the Bail-in Process

1. Bank resolution and Bank Bail-in under the Dodd Frank Act (DFA)

(a) Overview

Under section 204(a) (1) of the Dodd Frank Act creditors and shareholders bear all the losses of the financial company that has entered OLA. This is in accord with one of the Act’s explicit aims, as stated in its preamble: “to protect the American taxpayer by ending bailouts.” To this effect, Title II of the Dodd-Frank Act provides the FDIC with new powers to resolve SIFIs. Under OLA, the FDIC may be appointed receiver for any U.S. financial company that meets specified criteria when resolution under the U.S. Bankruptcy Code (or other relevant insolvency process) would be likely to create systemic instability.

² Notably, although both the US and the European authorities are moving simultaneously towards reliance on bail-in mechanisms, we are struck by how little attention appears to be paid in each to the detail of what the other is doing. It is instructive that in the FRBNY Special Issue on ‘Large and Complex Banks’ (2014), the papers by McAndrews, et al, and Sommer hardly mention Basel III, the BRRD or any European initiative. Equally much of the discussion within Europe on its own resolution mechanisms ignores the DFA, and looks inwards.

In order to make group resolution effective and to minimize systemic disruption, the FDIC has decided that it will follow the Single Point of Entry approach (SPOE) (FDIC, 2013), which is the final step in the implementation of the “source-of-strength” doctrine (enshrined in section 616(d) of the DFA). In the event of bank failure the top-tier holding company will have to enter into receivership and attendant losses will be borne by the holding company’s shareholders and unsecured creditors. Section 210(a)(1)(M) of the Act provides that the FDIC, as the receiver for a covered financial company, succeeds by operation of law to all the rights, titles, powers, and privileges possessed by, inter alia, the creditors of the resolved and all rights and claims that the stockholders and creditors of the resolved institution may have against its assets are terminated, but for their right to receive payment under the provisions of section 210. The FDIC would then form a bridge holding company (“Newco”)³ and transfer the failed holding company’s ownership of healthy operating subsidiaries into it, leaving the holding company shareholders and creditors behind in the estate of the failed holding company. Operating subsidiaries that face no solvency problem will be transferred to the new solvent entity or entities (NewCo).

Section 210 requires the FDIC to conduct a claims process and establish a claims priority pyramid for the satisfaction of claims against the resolved entity without the use of taxpayer funds. At the conclusion of this process claims against the receivership would be satisfied through a debt-for-securities exchange in accordance with their priority under section 210 through the issuance of debt and equity in the new holding company.

Prior to the exchange of securities for claims, the FDIC would determine the value of the bridge financial company based upon a valuation performed by the consultants selected by the board of the bridge financial company. Yet the FDIC has stated that it expects “shareholders’ equity, subordinated debt and a substantial portion of the unsecured liabilities of the holding company—with the exception of essential vendors’ claims—to remain as claims against the receivership.” (FDIC, 2013).

This is essentially the bail-in process under Title II, which aims at giving the NewCo what is essentially a clean bill of health rather than turning unsecured creditors into NewCo shareholders. OLA’s bail-in process will be utilized to resolve the holding company (“closed bank” process), although the operating subsidiaries remain unaffected, and, thus, it differs from the BRRD approach that provides, in addition, the option to use an “open bank” bail-in process.

By establishing the bridge financial company with significant assets of the parent holding company and many fewer liabilities, it is hoped that the bridge financial company would have a strong balance sheet that would put it in a good position to borrow money from customary market sources. The FDIC has indicated that contingent value rights, such as warrants or options allowing the purchase of equity in the new holding company or other instruments, might be issued to

³ “The term ‘bridge financial company’ means a new financial company organized by the Corporation in accordance with section 210(h) for the purpose of resolving a covered financial company.” (Dodd-Frank, Title II, Sec. 201 (3)).

enable funding the transition/resolution (FDIC, 2013). If there are shortfalls or these sources of funding are not readily available, the SPOE approach offers the benefit of FDIC's access to the Orderly Liquidation Fund (OLF), provided that borrowings from the fund can be fully secured and repaid. Any costs incurred by the FDIC as the appointed receiver or other public authority which cannot be covered by the above will be recovered from the industry.

The bail-in approach is not new in US bank resolution practice. For example, in 2008, the FDIC exercised its existing powers and resolved the part of the Washington Mutual group that was not sold to JP Morgan Chase, mainly claims by equity holders and creditors, under the least-cost resolution method. It imposed serious losses on the unsecured creditors and uninsured depositors (deposit amount above USD 100,000).⁴ OLA further expands the resolution authority of FDIC, including its power to cherry-pick which assets and liabilities to transfer to a third party, (though these will be subject to strict conditions to be further detailed by the FDIC) and to treat similarly situated creditors differently, e.g., favouring short-term creditors over long-term creditors or favouring operating creditors over lenders or bondholders. This discretion is curbed by the introduction of a safeguard that creditors are entitled to receive at least what they would have received if liquidation had taken place under Chapter 7 of the Bankruptcy Code (comparable to the "best interests of creditors" test under the Bankruptcy Code).

(b) Evaluation

Although TARP and other forms of direct bank capitalization by the US Treasury during the 2008 crisis did not prove to be loss-making, the issue of moral hazard and principled opposition to a private company receiving public assistance in bankruptcy means that one of DFA's key rationales is exclusion of bailouts. Thus, as mentioned earlier, OLA treats the holding company as a bankrupt (gone) concern. There may, however, be some caveats.

First, the dismemberment of the parent holding company, in order to provide the necessary funding for the recapitalization of the operating banking subsidiary(ies) may have reputational impact on the entire group, including the (seemingly unaffected) operating subsidiaries.

For example, Bank Majestic Holding Co. liquidation will inevitably be accompanied by round the clock media coverage. It is hard to imagine what that would mean to the ordinary bank depositor and financial consumer. It is very likely that they will assume that Bank Majestic (operational) is also endangered. One reasonable remedy would be to have the names of the holding company, and the operational subsidiary(ies), separated (ring-fenced), but which part of the group gets which (name) will be an issue with potential consequences for franchise value. Also such name separation may not work, as it would not be very hard for the media to explain to ordinary depositors and consumers that it

⁴ FDIC Press Release, 'Information for Claimants in Washington Mutual Bank' 29 September 2008, available at <http://www.fdic.gov/news/news/press/2008/pr08085b.html>

is the parent company of Majestic has entered into liquidation. A further route would be to conduct OLA in utter secrecy and just announce the parent's liquidation once the process has been concluded. But stock exchange rule implications, notices to affected bank creditors, potential litigation, and the structure of OLA itself in DFA, which involves so many stakeholders, makes such a "secrecy" approach impossible.

Could the subsidiary bank, with help from the authorities, really handle the reputational fall-out?⁵ Historical evidence of reputational contagion, e.g. in the case of certain solvent subsidiaries of BCCI, would suggest that this could be a real danger. If such depositor flight should then occur, the Central Bank (or in the USA the Orderly Liquidation Fund) might have to pump in large amounts of liquidity. While this would be protected by seniority and collateral, the previous buffer represented by the holding company's capital would, at least initially, no longer be there. So a large portion of the operating company's continuing liabilities might come either from the Central Bank (or OLF) or be backed by the deposit insurance fund, with some potential call on public support.

The second question is about the speed of rebuilding the capital structure of the new HoldCo after the bankruptcy of the initial holding company. While bail-in is not taken in isolation but is part of a restructuring process under which management is replaced and group business restructured, if the new HoldCo's capital structure is not rapidly rebuilt, one would be left with an initially thinly capitalized operating bank (Sommer, 2014) plus large public sector liabilities. The government cannot force private sector buyers to purchase new equity and (subordinated) debt in a new HoldCo, and the prior experience would make private buyers wary. Certainly the authorities could require the operating bank to retain all earnings, (e.g. no dividends, buy-backs, etc.), but in a generalized financial crisis, it could take a long time to regenerate a new holding company by building up retained earnings. Of course, the authorities could massively expedite the process by injecting new capital into a new HoldCo, (with the aim of selling off such equity later back to the private sector), but that would just be another form of bail-out. While the HoldCo proposal has been carefully worked out in its initial stage, what is less clear is what might then happen in the convalescent period.

The third question is about costs to the rest of the sector of rolling over maturing bail-inable debt, once it has been announced that losses have been imposed on Majestic Holdings' holders of bail-inable debt in the event of Majestic's failure. The cost of such debt could spike and HoldCos might be tempted to let their own buffers slip below the required level. Of course regulatory authorities could impose sanctions in such cases. But in doing so they will have to consider the impact of rising funding costs to the sector, both in terms of operating costs and in terms of solvency if such intervention takes place, as is likely, in a recessionary economic climate or worse during a generalized bank asset crisis.

⁵ No doubt the resolution would have to be accompanied by a careful communication strategy, but the example of Northern Rock shows how this can go wrong.

The fourth question relates to the interaction between the DFA approach and the Basel III capital requirements, which appear to necessitate an earlier intervention approach than DFA's OLA. Under the latter, the authorities should intervene to resolve a bank whenever its core tier 1 equity falls below 4½% of Risk Weighted Assets. A bank with CT1E between 0 and 4½% is not formally insolvent, i.e., it is still "going", rather than "gone", concern. It is to be hoped that regulators would intervene in a failing bank before the formal insolvency point is reached. But then they would not be able to bail-in senior unsecured debtors under the "no creditor worse off" (NCWO) condition. Either all the debt in the HoldCo, comprising subordinated debt or contingent capital instruments (Co-Cos), would have to be designated as bail-in-able, which could have a considerable effect on bank funding costs, or the authorities could just not take pre-emptive action, disregarding the Basel III requirement. Either route might prove problematic.

NY Federal Reserve staff express the opinion that US authorities will disregard the Basel III requirement (of earlier intervention/recapitalization) (McAndrews, et al, (2014)), and go on to state that "[t]he resolution authority in our model is "slow" in the sense that it will shut down and resolve a firm only once its (book) equity capital is exhausted" (McAndrews, et al, (2014), p. 5, also p. 15 and footnote 16 therein). Perhaps because the costs of such a slow response are recognized, McAndrews et al. express a preference for specially designed bail-inable debt to an equivalent amount of extra equity (McAndrews, et al, (2014), section 4, pp 14-23). Issued ex ante and specially designed to absorb conversion or write down losses subordinated debt (called hereinafter D bail-inable debt), essentially a form of pre-paid insurance for bank failure (Gordon, Ringe, 2014) has specific advantages and costs. Some of the advantages might remain unproven.

McAndrews, et al suggest that the existence of sufficient D bail-inable debt would force earlier intervention by the authorities, before all the loss-making buffer had been eaten away. But if the trigger for intervention is to be book value insolvency, it will still be applied far too late to be optimal. If intervention is to be triggered earlier, prior to book value insolvency, the bank is not legally a "gone concern", making the satisfaction of NCWO principle problematic. At this stage, it remains unclear how US authorities intend to resolve this conundrum.

2. The FDIC-BoE Approach to Resolving G-SIFIs and Bail-in

Dodd-Frank explicitly authorizes coordination with foreign authorities to take action to resolve those institutions whose collapse threatens financial stability (Title II, section 210, N). A heat-map exercise conducted by US regulators determined that the operations of U.S. SIFIs are concentrated in a relatively small number of jurisdictions, particularly the United Kingdom (UK) (Gruenpeng (Chairman, Federal Deposit Insurance Corporation) 2012). Thus, the US and UK authorities proceeded to examine potential impediments to efficient resolutions and on a cooperative basis explored methods of resolving them.

This culminated in the joint discussion paper published by the Bank of England (BOE) and the Federal Deposit Insurance Corporation (FDIC) titled, *Resolving Globally Active, Systemically Important, Financial Institutions* comparing the resolution regime established by Dodd Frank Act Title II to the resolution powers of the UK's Prudent Regulation Authority (PRA). To this effect the two authorities have proposed that they will adopt the single "point of entry" (SPOE) approach, when appropriate,⁶ in the resolution of G-SIFIs.

The main implication of the SPOE approach to resolution is that G-SIFIs would have to put in place:

- a group structure based on a parent holding company (HoldCo);
- the ring-fencing of (domestic and overseas) subsidiaries that undertake critical economic activities, so that the continuity of these activities can be more easily maintained in a resolution;
- Issuance of bail-inable debt by the holding company to enable the group to be recapitalised in a resolution through the conversion of this debt into equity;
- Holding company debt will be used to make loans to subsidiaries, so that subsidiaries can be supported in a resolution through writing off these loans.

Although initially a group taken into resolution would be "owned" by the FDIC (in the US) or, perhaps, under a trustee arrangement (in the UK), the intention is that the group would be returned to private ownership, with the creditors whose debt is converted into equity becoming the new owners of the group. Both the BRRD and the UK Financial Services (Banking Reform) Act 2013, implementing government's plans to introduce, with modifications, the Vickers' Report recommendations, include requirements that banks have sufficient capital and debt in issue to make them resolvable using bail-in or other resolution tools.

Under the HoldCo approach the continuity of critical economic activities is preserved because – in most cases – the subsidiaries of the holding company should be able to continue in operation, either because they have remained solvent and viable, or because they can be recapitalised through the writing down of intra-group loans made from the holding company to its subsidiaries. A subsidiary would need to be resolved independently only where it had suffered large losses.

Under the FDIC-BoE joint paper, in the UK the equity and debt of a resolved holding company would be held initially by a trustee, though the BRRD now provides alternative methods as well (Arts 47, 48, 50). The trustee would hold these securities during a valuation period. The valuation is undertaken to assess the extent to which the size of the losses already incurred by the firm or expected to be incurred can be ascertained in order to determine the extent of required recapitalization. Namely, valuation of losses determines the extent to which creditor claims should be written down and converted. During this period, listing of the company's equity securities (and potentially debt securities) would be suspended.

⁶ The joint Paper recognizes that multiple point of entry (MPE) may be more appropriate in some cases of complex cross-border banks.

Once the amount of required recapitalisation requirement has been determined, an announcement of the final terms of the bail-in would be made to the previous security holders. On completion of the exchange the trustee would transfer the equity to the original creditors. Creditors unable to hold equity securities (e.g. because they cannot legally hold equity shares) will be able to request the trustee to sell the equity securities on their behalf. The trust would then be dissolved and the equity securities of the firm would resume trading.

We discuss the additional questions raised by cross-border banking, which, however, will be the norm for most SIFIs and by definition for GSIFIs, in Appendix A.

3. The European Approach

Bail-in is a pre-condition for bank resolution in the EU and for (ultimately) ESM implemented bank recapitalization within the Eurozone. In a nutshell before a Member State is allowed to tap ESM resources for direct recapitalization of a failing bank, a round of bail-in and national contributions must have taken place. National regulators must first impose initial losses representing at least 8% of the bank's liabilities on shareholders and creditors (Art. 38 and 39 of the BRRD (as finalized by EU Council Decision, Dec. 2013)) before they can use the national resolution fund to absorb losses or to inject fresh capital into an institution, and then only up to 5% of the bank's liabilities. In the event that bank losses exceed 13% of its liabilities, a further bail-in round may take place in order for the residual losses to be absorbed by creditors and non-guaranteed and non-preferred depositors before public money and then ESM funds are used. These conditions make ESM assistance an absolute last resort in order both to counter moral hazard and to allay any fears of de facto mutualization of liability for bank rescues in the Eurozone.⁷ It is clear that the EU holds high hopes about the effectiveness of this mechanism, an approximation to which has already been tried in Cyprus in March 2013⁸ and for the restructuring of the Spanish banking sector.⁹ It is also hoped that bail-in will nullify the need for state

⁷ Use of ESM funds when a bank public bail-out proves to be necessary is subject to a number of strict conditions. The ESM may intervene directly only at the request of a Member State stating that it is unable to provide the requisite funds on its own without endangering the sustainability of its public finances or its market access. The relevant institution will also have to be a systemic bank, and the difficulties it faces must threaten the euro zone's financial stability. The ESM takes action only jointly with this Member State, which ensures that countries have an incentive to curb the use of public funds as far as possible. See Arts 1-3 of ESM Guideline on Financial Assistance for the Recapitalisation of Financial Institutions.

⁸ While the authorities would say that the Cypriot case was very different, given the absence of the resolution tools provided by the BRRD, we feel that its implementation gave important further momentum to the adoption of bail-in processes.

⁹ Under the terms of bankruptcy reorganization of Bankia and of four other Spanish banks, and in accordance with the conditions of the July 2012 Memorandum of Understanding between the Troika (EC, ECB, and IMF) and Spain, over 1 million small depositors became Bankia shareholders after they had been sold "*preferentes*" (preferred stock) in exchange for their deposits (FROB, July & Dec. 2012). Following the conversion, the *preferentes* took an initial write-down of 30-70%, which became much wider when the value of Bankia shares eventually collapsed (originally valued at EUR 2 per share,

aid for the banking sector across the EU and not just within the confines of the Eurozone (Angeloni, Lennihan, 2014).

Yet the legal entity by legal entity approach raises its own set of difficult issues. In the case of non-EBU groups, resolution colleges might smooth co-ordination issues but, a bail-in decision has distributional consequences, potentially with clear losers. So in some cases it might even create a crisis of confidence in a member state's banking system, and strong disagreements are bound to arise as to which subsidiary is bailed-in and which is not. Where there are subsidiaries in non-EBU European countries such disagreements could even go as far as creating serious problems in the relationship of the EBU with non-EBU European countries, especially where losses are bound to fall unevenly. The obvious solution is to follow a group-based resolution approach and aggregate all losses to the group entity in accordance with the US model, but that would seem to us to reinforce subsidiarisation, which goes against the operating principles and constitutional freedoms underpinning the single European market.¹⁰

Another significant challenge that the EU approach to bail-in raises is the aforementioned issue of liquidity support from resolution funds and central banks. This could be provided either to each legal entity, against the collateral available to that entity, or channeled through a parent company. In either case, if that happens within the Eurozone, all liquidity funding from the central banks would eventually have to be booked on the ECB's balance sheet, at least until the bank is successfully restructured.

C. Problems of Bail-in for a “going concern” bank

1. Effective Resolution Substitute?

While OLA provides for the liquidation of the bank holding company, it uses bail-in to leave operating subsidiaries unaffected. The EU, on the other hand, has an “open” bank resolution process that is reliant on the successful bail-in of the ailing bank. So both jurisdictions view the bail-in process as a substitute to liquidation of either the entire group or of parts of the group, combined of course with the use of other resolution tools. This is not an unreasonable approach, especially in the case of a largely idiosyncratic cause of failure, e.g., fraud. But there are four essential conditions that have to be met when using the bail-in process as a resolution substitute: timing, market confidence, the extent of restructuring required, and accurate determination of losses.

First, the issue of when to trigger the bail-in process, taking also into account the

which was further devalued to EUR 0.1 after the March 2013 restructuring of Bankia. ‘Bankia Press Release, ‘BFA-Bankia expects to culminate recapitalisation in May’ March 2013, available at <http://www.bankia.com/en/communication/in-the-news/news/bfa-bankia-expects-to-culminate-recapitalisation-in-may.html>

¹⁰ See on this point Charles Randell, ‘The Tale of Two Banks’ paper presented in the LSE Conference “Managing and Financing European Bank Resolution” and discussant’s comment by Emiliós Avgouleas both available at <http://www.systemicrisk.ac.uk/sites/default/files/media/%28Final%29-24th%20March%20programme%20-%20Managing%20and%20financing%20European%20bank%20resolution.pdf>

requirements of early intervention regimes (e.g., Art. 23 et. seq. BRRD), is matter of cardinal importance. Identification of the right time and conditions to trigger the bail-in tool in a process that extends conversion beyond specially designed bail-able debt will be one of the most important for any bank supervisor. The reasoning leading to supervisors' decision will much resemble first and second order problems in mathematics and logic. If the supervisor triggers bail-in early, then the full measure of losses may not have been fully revealed, risking further rounds of bail-in. But if the supervisor determines to use the bail-in tool at a later stage, when the full scale of losses to be imposed on creditors is revealed, they risk a flight of bank creditors who do not hold D bail-able debt.

Moreover, speed of resolution/recapitalization (albeit at the expense of flexibility) is one of the reasons for the popularity of bail-in among regulators (Sommer, 2014). Yet, we doubt whether the adoption of bail-in regimes would lead to earlier regulatory intervention than under the bail-out regimes. The aforementioned paper by McAndrews, et al, reinforce our view that legal concerns about imposing potentially large losses on private creditors could unduly delay resolution, perhaps until the last possible minute. By then the liabilities needed to be written down could extend beyond HoldCo's specially designated bail-inable debt. Bail-out, being undertaken by the authority of the government, is, we would argue, somewhat less liable to legal suit than bail-in. On the other hand, bail-in of bank liabilities that extends beyond D bail-able debt affects a wider range of creditors; there are more parties to the negotiation, and hence that may be more protracted.

In our view, the more delayed will be the onset of Resolution, the more essential it will be to put more emphasis on an earlier Recovery phase.

There are also other concerns. In the absence of a fiscal backstop for other parts of the financial system, if bail-in is triggered before measures have been taken to buttress the rest of the financial system a creditor flight from other banks will be certain, spreading the tremors throughout the financial system, even if those banks retain sufficient amounts of D bail-in able debt. Timothy Geithner has eloquently explained this situation¹¹:

“The overwhelming temptation [in a crisis] is to let the most egregious firms fail, to put them through a bankruptcy-type process like the FDIC had for community banks and then haircut their bondholders. But unless you have the ability to backstop every other systemic firm that’s in a similar position, you’ll just intensify fears of additional failures and haircuts.”

Secondly, market confidence in the bailed-in institution would have to be quickly restored in order to preserve franchise value and repay official liquidity support (Sommer, 2014). As mentioned in section B(1)(b) above this is mostly dependent on how fast the capital structure of the requisite bank (or the new bank in the event of a “closed” bank process) is rebuilt. If the institution has entered into a death spiral with customers, creditors and depositors fast disappearing reversing the trend would doubtlessly prove a task of daunting proportions.

Thirdly, triggering the bail-in process will prove unsuccessful if bank losses are not properly identified in some finite form. The determination of bank losses including

¹¹Geithner, 2014, p. 306.

unrealized future losses must be accurately determined in order to avoid successive rounds of bail-in losses accruing to bank creditors. This might in fact prove a challenging task. For example, bank losses in the recent crisis have consistently been underestimated.

Normally bank failures occur when macro-economic conditions have worsened, and asset values are falling. Bank failures during boom conditions, e.g. resulting from fraud, such as Barings, are easier to handle with less danger of contagion. In the uncertain conditions of generalized asset value declines, the new (incoming) accountants, employed by the resolution agency, are likely to take a bad scenario (or even a worst case) as their base case for identifying losses, to be borne by the bailed-in creditors, partly also to minimize the above-mentioned danger of underestimation leading to further calls on creditors. Previously the accountants of the failing bank itself will have been encouraged (by management) to take a more positive view of its (going concern) value. Thus the transition to bail-in is likely to lead to a huge discontinuity, a massive drop, in published accounting valuations. This could put into question amongst the general public the existing valuations of other banks, and lead, possibly rapidly, to a contagious crisis, on which we add more below.

Moreover, restructuring should extend to the underlying business model, which led the bank to bankruptcy in the first place, to avoid several bail-in rounds in the future.

2. Who Meets the Burden?

(a) Overview

In general, banks have three types of creditors:

banking creditors, including retail and wholesale depositors, needing to use the provision by the bank of payment and custody services;

investment business creditors, including swap counterparties, trading counterparties, and those with similar claims from trading activity such as exchanges, clearing systems and other investment business counterparties (including repo counterparties);

financial creditors, comprising long term creditors of the bank, including bondholders and other long-term unsecured finance providers (Clifford Chance, 2011).

When banking groups are resolved only the third type of creditors should be affected by bail-in, since banking creditors and investment business creditors will most likely hold claims against unaffected operating subsidiaries. This is, however, not the case where, under the EU approach, resolution is undertaken at the legal entity level. Under the BRRD business creditors may be exempted, through pre-designed “carve-outs”. It is not inconceivable that this exemption may be utilized to shift disproportionately the burden of bail-in onto other classes of creditors such as bondholders and unprotected depositors.

Arguably, in contrast to bail-outs, where all the taxpayers are, in some sense, domestic constituents, an advantage of bail-in is that some creditors may be foreign, but this is an elusive and possibly false advantage. The aim to penalise Russian

creditors of Cypriot banks might have played a significant role in the way that “rescue” was structured. Similarly the treatment of the creditors of Icelandic banks was organised in such a way as to give preference to domestic depositors over foreign bondholders¹². But the foreign investors would, of course, realise that they were in effect being targeted, so that they would both require a higher risk premium and flee more quickly at the first sign of potential trouble. The result is likely to be that a larger proportion of bank bondholders will be other (non-bank) financial intermediaries of the same country, providing a further small ratchet to the balkanization and nationalisation of the banking system. In any case, the BRRD disallows discrimination between creditors on the basis of their nationality or domicile, eradicating this mis-conceived advantage of bail-ins over bailouts.

With a purely domestic bank, the effect of shifting from bail-out to bail-in will, therefore, primarily transfer the burden of loss from one set of domestic payers, the taxpayers, to another, the pensioners and savers. It is far from clear whether, and why, the latter have broader backs and are better placed to absorb bank rescue losses than the former. One argument, however, is that savers, and/or their financial agents, have made an ex ante choice to purchase the claim on the bank, whereas the taxpayer had no such option, and that, having done so, they could/should have played a monitoring role. While this is a valid point, the counter-argument is that charities, small or medium size pension funds, or individual savers, e.g., via pension funds, do not really have the expertise to act as effective bank monitors. Thus, forcing them to pay the penalty of bank failure would hardly improve bank governance. On the contrary it would only give rise to claims that they were “tricked” into buying bail-in-able debt.¹³ Arguably, BRRD’s provisions (Art. 37(3)(c)(iii) and Recitals 48(a) and 78(a)) reflect these concerns by giving resolution authorities the power to exempt (in “exceptional circumstances”), from the application of the bail-in tool, liabilities held by individuals and SMEs beyond the level of insured deposits. The chief rationale for this discretionary exemption is avoidance of contagion, a very plausible concern. If it is applied in a wider context, this safe harbour could provide adequate protection to vulnerable segments of savers’ population. These are, in general, weak bank governance monitors and, at the same time, stable sources of cheap funding. Such wider (albeit ad hoc) protection would reinforce the confidence of these parts of society and economy in the banking system.

3. Governance

The treatment of bailed-in creditors, especially where creditors will be issued new securities rather than having their claims written-down, is likely to be complex, time-consuming and litigation intensive. Faced with such costs the original creditors are likely to sell out to those intermediaries that specialise in such situations, e.g. “vulture” hedge funds. So, as already seen in the case of the Co-op Bank, ownership

¹² See S. Goodley, “Bondholders may take legal action against Iceland over failed banks Bondholders may take legal action against Iceland over failed banks”, *The Guardian*, 7 November 2010, available at <http://www.theguardian.com/business/2010/nov/07/iceland-banks-bondholders-legal-action>

¹³ Would such bail-in able debt be a suitable investment for pension funds, charities, local authorities and individuals? The Pensions Regulator, the Department for Communities and Local Government, the Charities Commission and the FCA may need to consider whether further rules in this area would be necessary.

may fall into the hands of a group of such hedge funds¹⁴; the same would probably have happened had there been creditor bail-in in Iceland and Ireland. In Cyprus creditor bail-in has given a large share of ownership to big Russian depositors.¹⁵ In theory, this problem could be resolved by placing caps on how much bail-inable debt different creditors could hold. In practice, however, such caps would encounter legal constraints, at least, under EU law. In addition, if caps are very strict, they would restrict the liquidity of the market for bail-inable debt and could lead to banks having to hold insufficient amounts of bail-inable debt, increasing the need for a public bail out.

In spite of their numerous disadvantages, bail-outs do give governments the power to direct and specify who is to take over the running of the rescued bank. That is not the case with some versions of the bail-in approach. In the USA the role of the FDIC as “trustee” of the resulting bridge company should, however, deal with this point. But elsewhere the resulting governance structure could become unattractive to the authorities and public. While there is a safeguard that the new managers have to be approved by the regulatory authorities, nevertheless the ethos, incentives and culture of a bank, whose ownership is controlled by a group of hedge funds for example, is likely to differ from that of a bank rescued by a bail-out.

4. Legal Costs

While there might be a few jurisdictions such as the UK where bail-in regimes can be established by contract, elsewhere this route would lead to a stream of litigation (Gleeson, 2012). As a result, in most jurisdictions, including the UK, bail-in regimes are given statutory force (e.g., Art. 50(2) of the BRRD). Yet this does not mean that litigation will be avoided when the bail-in process is triggered. Bail-in regimes that extend beyond D bail-inable debt clearly encroach on rights of property, which remain entrenched in countries’ constitutions and international treaties. Legal claims will be raised both by shareholders who will see their stakes wiped out and creditors who will see the value of their claims reduced or diminished¹⁶ and it is unlikely that the “no creditor worse off” principle, which both Dodd-Frank and the UK’s Banking Act and the BRRD (Art. 29(1)(f)) have adopted as a creditor safeguard under the bail-in process, will deter the expected stream of litigation. In fact, the principle could make litigation even more likely. Therefore, where the result of government action is that bailed-in creditors receive a demonstrably lower return than they would have done had the bank proceeded to disorderly liquidation, they should be compensated (Gleeson, 2012), but by whom and in what form? Would that be in the form of shares in the

¹⁴ Co-op Group, which owned the Co-operative Bank outright, eventually bowed to the demands of a group of bondholders, including U.S. [hedge funds](#) Aurelius Capital and Silver Point Capital, and agreed to a restructuring which left them with a 30 percent stake in the bank. See M. Scuffham, “Co-op to cede control of bank to bondholders”, Reuters, 21 Oct. 2013, available at <http://uk.reuters.com/article/2013/10/21/uk-coop-bank-bondholders-idUKBRE99K05O20131021>

¹⁵ A. Illmer, ‘Russia’s rich dominate Cyprus’ largest bank’, Deutsche Welle, 18 Oct. 2013, available at <http://www.dw.de/russias-rich-dominate-cyprus-largest-bank/a-17146540>

¹⁶ E.g., see “Russian depositors begin seizing property of Cypriot banks”, Russia Today, 12 April 2013, available at <http://rt.com/business/laiki-cyprus-banks-arrest-765/>

NewCo or of the recapitalized operating subsidiary? Even so, rapid restoration of public confidence is the only way to make creditors' converted stakes valuable.

Moreover, a significant proportion of the costs of bank resolution could involve settling conflicts of interest among creditors (IMF, 2013). This is particularly likely to be so in so far as bail-in will concentrate ownership amongst “vulture” hedge funds, whose métier is the use of legal means to extract large rents. Shifting the burden of meeting the costs of recapitalisation from a small charge (on average) imposed on the generality of taxpayers to a major impost on a small group of creditors, easily capable of acting in unison, is almost bound to multiply the legal costs of such an exercise manifold, however much the legal basis of this process is established beforehand.

This is easily explainable. In the case of taxpayer-funded bail-outs, everyone's tax liabilities go up a little, (and the relative burden has, in a sense, been democratically reviewed and decided); in the case of creditor bail-in, a few will lose a lot, and will, therefore, have stronger incentive to protest and litigate.

5. Funding Costs

There are two aspects to this, a static and a dynamic one. There have been numerous quantitative studies of the “subsidy” provided by the implicit government bail-out guarantee to the larger banks which are too-big-to-fail (Santos, 2014; Morgan and Stiroh, 2005; Ueda and Weder-Di Mauro, 2011; Li *et al.* 2011). There is sufficient evidence to show that Too-Big-To-Fail banks are prone to take much riskier assets than other banks (Afonso *et al.* 2014; Brandao *et al.* 2013; Gadanez *et al.* 2012, Gropp *et al.* 2011).

Such a subsidy is also criticised as undesirable and unfair distortion of competition. Taking advantage of lower funding costs, larger banks cut margins aggressively to edge out smaller competitors (Hakenes and Schnabel, 2011). Thus, the subsidy distorts the pattern of intermediation towards larger banks and away from smaller banks and non-bank intermediation, including peer-to-peer channels. But there is a counter-argument. Shifting intermediation to smaller banks or to other parts of the financial system will take it from safer, better regulated and more transparent banks (including bigger banks) to riskier, less regulated, and less understood channels. In addition, dependent on the state of competition between banks, much of that subsidy will have gone to providing better terms, primarily in the shape of lower interest rates, to bank borrowers. Controversially, perhaps, size improves banks operating costs (Kovner *et al.* 2014).

Funding costs may not be a major concern in the case of bail-inable debt but there might be an issue of adverse selection. First, another facet of the same, static question is by how much funding costs of (large) banks have to rise if they have to hold specifically bail-inable debt. There are a range of views about this. As in the case of equity (Miles *et al.*, 2011, and Admati *et al.* 2011), if we compare one otherwise identical equilibrium with another, when the sole difference is that some categories of bank debt become bail-inable, it is doubtful whether the overall cost of bank funding would rise by much, say 10-30 bps. Moreover, with a rising proportion of bank creditors at risk from bank failure, there should be a greater benefit, in terms of lower

funding costs, from a patently safer overall portfolio structure. As explained in Section A above, one of the fundamental rationales of bail-in, is that creditors at risk will have an incentive to encourage bank managers to pursue prudent policies, a counter-weight to more risk-seeking shareholders.

Secondly, bail-inable debt may affect banks' choice of assets. If institutions are required to issue a minimum amount of bail-inable liabilities expressed as a percentage of total liabilities (rather than as a percentage of risk weighted assets), critically, this will impose higher costs on institutions with large amounts of assets with a low risk weighting (such as mortgages). Such institutions typically hold relatively small amounts of capital as a proportion of their total liabilities. In addition, institutions will face constraints on their funding models and higher costs if they are required to hold bail-inable liabilities in specific locations within a group (for example at group level when their funding is currently undertaken by their subsidiaries).

That bail-in regimes will provide some *ex ante* incentive to more prudent behaviour seems undisputable. Yet market discipline failed to operate effectively ahead of the current financial crisis and holders of bail-inable liabilities will face the same difficulties as other stakeholders in assessing the health and soundness of bank balance sheets (See on complexity as a monitoring barrier Avgouleas and Cullen, 2014a).

In addition, if bank(s) nevertheless run into trouble, then utilization of the bail-in process will give another twist to pro-cyclicality. With bail-in, the weaker that banks become the harder and more expensive it will be for them to get funding. In this respect high trigger Co-Cos would perform better than bail-in-able bonds. While, in principle, increased creditor monitoring could translate into greater focus on prudence and caution for the individual banker, in the face of a generalised shock, a sizeable proportion of the banks in a given country will seem weaker. Thus a shift away from bail-out towards bail-in is likely to reinforce procyclicality. The ECB has been cautious about bailing-in bank bondholders for such reasons.¹⁷

Of course, should the sovereign be in a weak fiscal condition, bail-out costs will give another twist to the “doom loop” of bank and sovereign indebtedness. But if the costs of recapitalising the banks in a given country are so large, does it help to shift them from the taxpayer to the pension funds, insurance companies and other large domestic investors, and also on the surviving banks? No doubt the crisis would take a different shape, but would it be any less severe? It could be (politically) worse if people began to fear that their pensions were being put at risk?

¹⁷ In his 30 July 2013 confidential letter to the then competition commissioner Joaquin Almunia, ECB's President Mario Draghi was reported to have expressed key concerns about the EU's bail-in regime under the draft BRRD. In particular Draghi was reported, by Reuters, who saw the letter, to have said that “imposing losses on junior creditors in the context of such “precautionary recapitalizations” could hurt subordinated bank bonds” and then adding: “... structurally impairing the subordinated debt market [...] could lead to a flight of investors out of the European banking market, which would further hamper banks' funding going forward”. Reuters, “Draghi asked EU to keep state aid rules for banks flexible”, Milan, 19 Oct 2013, available at <http://www.reuters.com/article/2013/10/19/us-banks-bondholders-draghi-idUSBRE99I03B20131019>

6. Liquidity Concerns

Once the bail-in process has been triggered, it is highly likely that the financial institution would only be able to continue conducting business with the ‘lifeline’ of emergency liquidity assistance. But the amount of liquidity support that could be provided by central banks and resolution funds (such as the Orderly Liquidation Fund in the US) may be constrained by a lack of sufficient high quality collateral, and by restrictions on any support that might result in losses falling on taxpayers. This would be accentuated if a number of major financial institutions had to be resolved at the same time. Critically, liquidity could be limited to supporting critical economic functions while other parts of the business are resolved.

Naturally, central banks and resolution funds will be reluctant to pre-commit to provide liquidity support in all circumstances. They will want to ensure that a “plan B” option is in place, including the immediate winding down of a failing financial institution through rapid sales and transfers, without liquidity support, which again would depend on a resolution plan drawn up in advance (KPMG, 2012). However, implementation of such plans would negate one of the biggest advantages of (“open bank”) bail-in regimes, namely the continuation of the resolved entity or of operating subsidiaries as a going concern.

7. Bank Creditors’ Flight and Contagion

A desideratum for a revenue raising mechanism is that the taxed cannot easily flee. It is difficult to avoid taxation, except by migration, which has many severe transitional costs. In contrast it is easy to avoid being hit with the costs of creditor bail-in; you just withdraw or sell your claim. Consequently, triggering the bail-in process is likely to generate a capital flight and a sharp rise in funding costs whenever the need for large-scale recapitalisations becomes apparent. Creditors who sense in advance the possibility of a bail-in, or creditors of institutions that are similar in terms of nationality or business models will have a strong incentive to withdraw deposits, sell debt, or hedge their positions through the short-selling of equity or the purchase of credit protection at an ever higher premium disrupting the relevant markets. Such actions could be damaging and disruptive, both to a single institution (Randell, 2011), and potentially to wider market confidence, a point that is also highlighted by proponents of the bail-in tool (Micossi et al. 2014, p. 9). In our view, market propensity to resort to herding at times of shock means that it is not realistic to believe that generalised adoption of bail-in mechanisms would not trigger contagious consequences that would have a destabilizing effect.

Where the ceiling of guaranteed deposits is set low a significant number of large depositors might migrate to other schemes such as Money Market Funds or even Investment funds that offer higher interest rates, as in the example of contemporary Chinese shadow banks. It would certainly take a lot of explaining to justify why weakening the liquidity of the regulated banking sector and increasing its funding costs in order to boost liquidity levels and lower the funding costs of the unregulated shadow banking sector is a measure to strengthen financial stability. On the contrary, a lack of Lender of Last Resort type of liquidity support in the unregulated sector could make bank-type runs inevitable, increasing the possibility of psychological

spillovers into the regulated sector and generalized panic, (as occurred in the USA in 1907).

It is, of course, true that equity holders and bond holders cannot run in the same way that depositors can, but financial counterparties can easily do so and will do so if they do not immediately see a hefty capital cushion in the bailed-in bank (Sommer, 2014). If these flee then equity and bond holders would certainly follow and in their attempt to do so they would drive asset values sharply down to an extent that would make the option of raising new money, or rolling over existing maturing bonds, unattractive or virtually impossible. In such circumstances, bank credit extension would stop, amplifying the downturn, lowering asset values yet further and putting the solvency of other banks at risk. Excluding depositors of all brands from bail-in might reduce the danger of contagion but would not remove it.

8. International Coordination

The resolution of G-SIFIs with bail-in is examined in Appendix A. However, some thoughts are apposite here to provide a fuller evaluation of bail-in advantages and disadvantages. In our view, the top-down SPOE approach adopted by the US regulators is conceptually superior. Assets and liabilities at the operating subsidiary level are not part of the painful debt restructuring bail-in exercise and may continue operations regardless. There are however four clear disadvantages in implementing this approach in the case of G-SIFIs.

First, the (unaffected by resolution) operating subsidiary might, nevertheless, suffer a flight due to reputational contagion, which triggers an irrational but quite likely panic, regardless of parent's ability to sufficiently recapitalize the operating parts of the group through conversion of bail-in-able liabilities. Secondly, apart from closely inter-related banking markets like the UK and the US, where the level of trust between national authorities is high, it is doubtful if any form of non-binding bilateral arrangements, including MOUs, would hold in the event of a cross-border banking crisis, involving a transfer of funds from one jurisdiction to another (Sommer, 2014). The gulf between regulators will become even deeper, if the majority of a certain form of group level funding (e.g., tripartite repos) is booked with a specific subsidiary that is not based in the same place as the HoldCo being resolved (Skeel, 2014). Thirdly, it is arguable that when the subsidiary is ring-fenced the regulators may expect the subsidiary creditors, as well as shareholders like the HoldCo, to bear the cost of bail-in. Fourthly, the top-down approach could increase scope for arbitrage and regulatory forbearance. In most cases it will be the home country regulator that will have the final word as regards the level of D bail-inable debt to be held by the HoldCo. But D bail-inable debt could prove more expensive than other subordinated debt. Thus, a home regulator concerned about the health of banks in its domestic market would be much less keen on increasing the cost of funding of its banks, unless legally bound to do so through bilateral or multilateral arrangements with host authorities. In fact, the absence of such arrangements could trigger multiple races to the bottom meaning that many HoldCos might not have a sufficient level of D bail-able debt to recapitalize the group subsidiaries. In addition, there could also be circumstances where home resolution authorities are reluctant to use the bail-in tool because of its adverse impact on specific groups of creditors (KPMG, 2012).

A host resolution authority might be tempted to trigger its own resolution and bail-in powers if it was concerned that it might not receive sufficient support from the new bridge holding company to meet losses at, and/or to preserve critical economic functions in, its local subsidiary. Art 87 of the BRRD explicitly extends this power beyond subsidiaries to branches of institutions from outside the EU. By means of this provision, EU member states can apply resolution tools, including bail-in, to such branches to protect local depositors and to preserve financial stability, independent of any third country resolution procedure, if the third country has failed to act. Similarly, subject to a number of conditions and on the basis EU of financial stability concerns, the BRRD (Art. 86) gives the right to European resolution authorities to refuse to enforce third country resolution proceedings over EU-based subsidiaries.

Accordingly the kind of international cooperation required to allow a top-down approach to operate effectively is unprecedented and it might well form the most challenging aspect of cross-border implementation of bail-in recapitalisation in the case of G-SIFIs.

D. Conclusions

“As the emerging-market crises and the entire history of financial crises made clear, imposing haircuts on bank creditors during a systemic panic is a sure way to accelerate the panic”¹⁸

While we fully understand the revulsion from too-big-to-fail banks and the (political) cost of bailouts, we are worried that the development of a bandwagon may conceal from its many proponents some of the disadvantages of the new bail-in regimes. While bail-in may, indeed, be much superior in several contexts, notably in the case of idiosyncratic failure, the resort to bail-in may disappoint unless everyone involved is fully aware of the potential downsides of the new approach.

A bail-in mechanism used for the recapitalisation of a bank as going concern has the following advantages, vis-à-vis a bail-out approach:-

- Lower levels of moral hazard
- Better creditor monitoring
- Protects taxpayers
- Places the burden more fairly
- Should improve ex ante behaviour of bank management
- Mitigates the Sovereign/bank debt “doom-loop”

But the bail-in process may also have some important disadvantages over bailouts, as it could prove to be:-

- more contagious and procyclical
- more litigious
- slower and more expensive as a process
- requiring greater subsequent liquidity injections
- leading to deterioration of governance
- requiring higher funding costs to banks
- providing a worse outlook for bank borrowers

¹⁸ Geithner, 2014, p. 214.

- worsening ex post outcomes

That the second list is longer than the first is no indication of which approach should be favoured. This paper is not intended to claim that the proposed reforms will make the process of dealing with failing banks necessarily worse. Its purpose is, instead, to warn that the exercise may have costs and disadvantages, which, unless fully appreciated, could make the outcome less successful than hoped. The authorities will no doubt claim that they have already, and fully, appreciated all such points, as and where relevant. But we would contend that many advocates of moving to the latter do not mention such disadvantages at all, or only partially. Perhaps the choice should depend on context.

The bail-in process seems, in principle, a suitable substitute to resolution (whether liquidation of a gone concern, or some other form of resolution in a going concern bank) in the case of smaller domestic financial institutions. It could also be used successfully to recapitalize domestic SIFIs, but only if the institution has failed due to its own actions and omissions and not due to a generalized systemic crisis (Gleeson, 2012). Otherwise, a flight of creditors from other institutions, i.e., contagion, may be uncontrollable. Even so, successful bail-in recapitalization would require rapid restoration of market confidence (Sommer, 2014), accurate evaluation of losses, and successful restructuring of the bailed in bank's operations to give it a sound business model to avoid successive rounds of bail-in rescues. It could, of course, prove very hard for regulators to secure all those pre-requisites of a successful bail-in recapitalisation in the event of a systemic crisis.

Moreover, generic structural, governance, legal, and other risks and costs associated with a cross-border resolution of a G-SIFI (discussed in Appendix A) make the use of the process highly uncertain in its outcome, unless failure was clearly idiosyncratic, for example, as a result of fraud.

Given these shortcomings and costs of bail-in bank recapitalisation, orderly and timely resolution of a G-SIFI would still require fiscal commitments. These could be established by means of ex ante burden sharing agreements, concluded either independently or by means of commitments entrenched in G-SIFI living wills (Avgouleas, Goodhart, Schoenmaker, 2013). Moreover, over-reliance on bail-in could deepen the trend towards disintegration of the internal market in the EU (CEPS, 2014), while providing uncertain benefits. So, effective recapitalization of ailing banks may still require a credible fiscal backstop. In addition, a fiscal backstop may be essential to avert, in the case of deposits held in the same currency across a common currency area, a flight of deposits from member states with weaker sovereigns to the member states with solvent sovereigns (Schoenmaker, 2014). This is more or less a Eurozone specific risk, unless the current structures on the use of ESM funds are gradually loosened. EU policy-makers ought to continue their efforts to build one instead of relying on the unproven thesis that the bail-in process can resolve the recapitalization challenges facing the Eurozone banking sector.

Finally, achieving the goal of making private institutions responsible for their actions would be the best policy in an ideal world where financial "polluters" would be held responsible for their actions. But, in practice, it might prove an unattainable goal.

Some of the aforementioned obstacles to effective bail-in, especially in the case of cross-border groups, could prove insurmountable. If this turns out to be the case then developed societies might have to accept that granting some form of public insurance is an inevitable tax for having a well functioning banking sector. At the same time, other forms of regulation like structural reform and cycle adjustable leverage ratios (plus more emphasis on the prior Recovery stage), if they prove to make banks more stable, should come to the forefront with renewed force.

Appendix A

The SPOE Approach with Bail-in: Important Challenges

1. The Cross-border dimension

Cross-border coordination - While the SPOE approach in the event of a cross-border resolution involving jurisdictions with long history of cooperation like the US and the UK makes good sense, especially from the resolution effectiveness viewpoint - UK authorities have stated that they are ready to step aside and give the FDIC a free hand in the event of resolution of a G-SIFI with UK subsidiaries (Tucker, 2014) - there is little assurance that other overseas authorities will feel the same. In order to avoid the possibility of home authorities interfering with transfers to, or from, foreign subsidiaries of the resolved group in the course of resolution, host regulators may force foreign subsidiaries to operate as ring-fenced entities increasing the trend towards disintegration of global banking markets. While this might sound like a reasonable strategy it gives rise to two undesirable consequences. First, capital and other resources within the banking group are not employed efficiently. Worse, during bad times the group is not able to shift resources from a healthy subsidiary to a troubled subsidiary. The latter may be located in a country that is in trouble itself and would greatly welcome an injection of capital and liquidity by the parent to the troubled subsidiary (Baer, 2014, p. 15). Secondly, recent data show that it has serious consequences for cross-border capital flows and investment and levels of global growth (FT, Jan. 2014¹⁹).

Liquidity provision as part of the resolution funding framework: meeting the liquidity requirements of the operating subsidiaries of the resolved group could be a challenging task, given also that access to market-based liquidity might be severely restricted for the resolved group. In the US, in the event of resolution of a SIFI under OLA, the bridge holding company will downstream liquidity, as necessary, to subsidiaries through intra-company advances. When this is not sufficient the FDIC will act as provider of liquidity through loans to the bridge company or any covered subsidiaries that enjoy super-seniority, or by granting of guarantees (section 204 of the Dodd Frank Act). Yet the issue is far from resolved as such loans and guarantees might not prove sufficient, especially if the quality of the collateral is not of a very high grade and the FDIC has not concealed that fact (FDIC, 2013). Normally, a G-SIFI is funded mostly through retail, and other short-term, deposits, which in the event of a bail-in could either dry up or even be withdrawn. So, as commonly recognized, a group in resolution may require considerable official liquidity support. This should only be provided on a fully collateralized basis, with appropriate haircuts applied to the collateral, to reduce further the risk of loss, but this depends on the adequacy of the available collateral.

In the UK, the policy for liquidity provision in resolution follows the provisions of the EU Bank Recovery and Resolution Directive (BRRD). The BRRD provides that

¹⁹ ‘The flow of money through the global financial system is still stuck at the same level as a decade ago, raising fresh concerns about the strength of the economic recovery following six years of financial crisis . . . ’ These findings were based on research carried by the McKinsey Global Institute for the *Financial Times* and was published by this journal on 7 January 2014.

resolution will primarily be financed by national resolution funds that can also borrow from each other (Art 97). The BRRD does not rule out provision of liquidity, in the event of resolution by the central bank.

The BRRD treats the Deposit Guarantee Scheme (DGS) as a creditor that can be bailed-in, with the costs of this falling on other firms, which have to fund the Scheme. Thus, the requisite DGS will have to contribute for the purpose of ensuring continuous access to covered deposits and relevant contributions will be *in cash* for an amount equivalent to the losses that the DGS would have had to bear in normal insolvency proceedings. Namely, the DGS contribution is made in cash in order to absorb the losses from the covered deposits. In order to provide for sufficient funding, the DGS will rank *pari passu* with unsecured non-preferred claims.

Under the BRRD member states are allowed to merge the administrative structures of the DGS with the Resolution Fund. But, even if Member states implement shared administrative structures, the sources of financing of DGS and the Resolution Fund must remain separate. The DGS is solely liable for the protection of covered depositors. If following a contribution by the DGS, the institution under resolution fails at a later stage and the DGS does not have sufficient funds to repay depositors, the DGS must have arrangements in place in order to raise the corresponding amounts as soon as possible from its members. Otherwise, treating the DGS as an unsecured depositor in the event of a systemic crisis might raise doubt about the sufficiency of funds available to it.

Location of bail-inable debt and of bank deposits: Another important issue is where the debt is located, namely, which entity within the group holds the debt. The joint FDIC-BoE paper envisages that, at least for UK groups, bail-inable debt will be issued by the top operating companies within a group, which, however, may operate in different jurisdictions. This means that the SPOE approach might prove elusive for non-US G-SIFIs. For G-SIFIs with substantial operations in the US, the Federal Reserve has introduced a final rule, implementing its Dodd-Frank mandate, requiring these operations to be held through a US holding company (FRB, 2014).²⁰ In the absence of MOUs similar to the one signed between the FDIC and the BoE, it is not clear whether the US authorities would seek to resolve the US operations on a stand-alone basis (by applying the SPOE approach within the US), or would stand back and allow the overseas parent to be resolved without the US authorities taking action.

The proportion of foreign creditors can go up dramatically when we move from purely domestic banks to cross-border banks with numerous foreign branches or subsidiaries. Most SIFIs, and all G-SIFIs, are cross-border. Indeed, the thrust of

²⁰ In a substantial break with past practice FRB's final rule requires large Foreign Banking Organisations with \$50 billion or more of (non-branch) assets in U.S.-chartered subsidiaries and all foreign SIFIs to place all their U.S. operations in a U.S.-based intermediate holding company ("IHC") on which the FRB will impose enhanced capital, liquidity and other prudential requirements on those IHCs, separate from and in addition to the requirements of the parent company's home country supervisor. Federal Reserve system, "Enhanced Prudential Standards for Bank Holding Companies and Foreign Banking", 18 Feb. 2014.

many recent proposals for bank resolution, for example those of the UK Independent Commission on Banking (Vickers Report) as incorporated with amendments in the Financial Services (Banking Reform) Act 2013 and some earlier Swiss measures, has been to limit taxpayer contingent liability to the local, domestic part of the bank. But not only will this lead towards further balkanization and localization of banking systems, it also raises the question of how far bail-in of only ring-fenced entities is consistent with a Single Point of Entry (SPOE) resolution mechanisms.

Moreover, legal disputes, and shareholder and creditor objections, will become even more acute where a subsidiary of the holding company is on the verge of failure, while the holding company has other viable and valuable subsidiaries. In such a case it could be perceived as disproportionate to cancel the claims of existing shareholders in the holding company since these retain significant value by virtue of the value of the non-failing group subsidiaries. Even if a value is placed on solvent subsidiaries, so that holding group shareholders are issued new shares of reduced value rather than being wiped out, the bail-in process will be protracted. This development could potentially have a seriously destabilising impact on the institution that is being resolved, since only speedy resolution can prevent a creditor run on the institution.

Resolving Systemic Subsidiaries: Equally challenging would be the application of SPOE to bail-in when overseas subsidiaries need to be resolved because they are both loss-making and are undertaking critical economic functions (KPMG 2012, Gleeson, 2012). It may not be possible, or efficient, to resolve them through an injection of capital from the parent holding company. Overseas resolution authorities may choose to exercise their own national resolution powers to intervene in the overseas subsidiaries – or even branches – of US and UK G-SIFIs. This would be consistent with the “multiple points of entry” (MPE) approach that underpins the EU BRRD, and with the growing trend towards “localisation” under which overseas host authorities seek to protect their national positions through the ring-fencing of the operations of foreign firms in their countries.

2. The EU Approach

By contrast to the FDIC-BoE approach, the EU will operate the bail-in regime on a legal entity basis (with the option of group level resolution also available subject to the BRRD conditions), although the BRRD provides for a consolidated group approach, based on close cooperation and coordination through resolution colleges and on group level resolution plans agreed in advance. So, in the event of a group resolution, each national authority would apply bail-in (and other resolution tools) to each entity based in its jurisdiction.

This reflects the different legal and operating structures across Europe and the fact that each member state operates, for now, its own Deposit Guarantee Scheme. But once the new Single Resolution Mechanism comes into force, Euro-wide resolution would be conducted by a single authority and SPOE could become an option, but MPE will still be the adopted route for subsidiaries located in the UK and other EU member states that are not part of the European Banking Union.

Bibliography

Admati, A., DeMarzo, P. M., Hellwig, M. F., Pfleiderer, P. (2011). Fallacies, Irrelevant Facts, and Myths in the Discussion of Capital Regulation: Why Bank Equity is *Not* Expensive. Mimeo, Stanford Business School, draft of April 2011, available at <https://gsbapps.stanford.edu/researchpapers/library/rp2065r1&86.pdf>

Afonso, G., Santos, J., Traina, J. (2014). Do “Too Big To Fail” Banks Take on More Risk? Federal Reserve Bank of New York, Economic Policy Review, Vol. 20, Special Issue: Large and Complex Banks.

Avgouleas, E., Goodhart, C., Schoenmaker, D., (2013). Recovery and Resolution Plans as a Catalyst of Global Reform. *Journal of Financial Stability*, Vol. 9, 210-218.

Angeloni, I., Lenihan, N., Competition and State Aid Rules in the Time of Banking Union, prepared for the Conference, Financial Regulation: A Transatlantic Perspective, June 6-7, 2014, Goethe University Frankfurt.

Atkins, R., Fray, K. (2014). Dramatic Fall in Cross-border Capital Flows Threatens Recovery. *Financial Times*, 7 January 2014, pp. 1&9.

Avgouleas, E., Cullen, J. (2014a). Market Discipline and EU Corporate Governance Reform in the Banking Sector: Merits, Fallacies, and Cognitive Boundaries. *Journal of Law and Society*, vol. 41, Corporate Governance Symposium special Issue, 28-50.

Avgouleas, E., Cullen, J. (2014b). Excessive Leverage and Bankers’ Pay: Governance and Financial Stability Costs of A Symbiotic Relationship’. University of Edinburgh, School of Law, WIP, February.

Baer, G. (2014). Regulation and Resolution - Toward a Unified Theory. *Banking Perspective*, The Clearing House, 12-21.

Bliesener, Dirk H. (2013). Legal Problems of Bail-ins under the EU’s proposed Recovery and Resolution Directive. In Kenadjian, Patrick S., Ed. *The Bank Recovery and Resolution Directive*, De Gruyter, e-book.

Brandao, M., Correa, L. R., Saprizza, H. (2013). International Evidence on Government Support and Risk Taking in the Banking Sector. IMF, Working Paper, 13/94.

Brown, E. (2013). Winner Takes All: The Super-priority Status of Derivatives, webofdebt.wordpress.com: April 9.

BIS Quarterly Review: June 2013. Table 19.

Clifford Chance, (2011). Legal Aspects of Bank Bail-ins. Available at http://www.cliffordchance.com/publicationviews/publications/2011/05/legal_aspects_ofbankbail-ins.html

Center for European Policy Studies (CEPS), 2014. Framing Banking Union in the Euro Area: Some Empirical Evidence (February). Available at <http://www.ceps.eu/book/framing-banking-union-euro-area-some-empirical-evidence>

Coffee, J. C. (2011). Systemic Risk after Dodd-Frank: Contingent Capital and the Need for Strategies Beyond Oversight. *Columbia Law Review*, Vol. 111, 795-847.

Dewatripont, M. (2014). European Banking: Bail-out, Bail-in and State Aid Control', *International Journal of Industrial Organisation*, 34 37-43.

EU Council, December 2013: Proposal for a Directive establishing a framework for the recovery and resolution of banks and investment firms (BRRD), 17958/13 18 Dec. 2013, final compromise text, amending EU Commission Proposal Directive establishing a framework for the recovery and resolution of credit institutions and investment firms and amending Council Directives 77/91/EEC and 82/891/EC, Directives 2001/24/EC, 2002/47/EC, 2004/25/EC, 2005/56/EC, 2007/36/EC and 2011/35/EC and Regulation (EU) No 1093/2010, COM(2012) 280 final.

EU Council, Dec. 2013: Bank recovery and resolution: Council confirms agreement with EP.

European Stability Mechanism, 2013: Guideline on Financial Assistance for the Recapitalisation of Financial Institutions.

FDIC and BoE, Dec. 2012: Resolving Globally Active, Systemically Important, Financial Institutions, a joint paper by the Federal Deposit Insurance Corporation and the Bank of England (December 10).

FDIC, Dec. 2013: Resolution of Systemically Import Financial Institutions: The Single Point of Entry Strategy. 78 Fed. Reg. 243 (December 18), pp. 76614-76624, available at http://www.bde.es/f/webbde/GAP/prensa/info_interes/ficheros/frob261212en.pdf

Federal Reserve System, Feb 2013: Enhanced Prudential Standards for Bank Holding Companies and Foreign Banking. Final Rule, 12 CFR Part 252 Regulation YY; Docket No. 1438 RIN 7100-AD-86.

Gadanetz, B., K., Tsatsaronis, K., Altunbas, Y. (2012). Spoilt and Lazy: The Impact of State Support on Bank Behavior in the International Loan Market. *International Journal of Central Banking*, Vol. 8(4), 121-173.

Geithner, T. F., (2014). *Stress Test: Reflections on Financial Crises*. New York, Random House.

Gleeson, Simon (2012). Legal Aspects of Bank Bail-Ins. Special Paper 205, LSE Financial Markets Group Series.

Gordon, J. N., Ringe, W-G. (2014). Resolution in the European Banking Union: A Transatlantic Perspective on What It Would Take. Oxford Legal Research Paper Series No 18/2014 (April).

Gropp, R., Hakenes, H., Schnabel, I. (2011). Competition, Risk-shifting, and Public Bail-Out Policies. *Review of Financial Studies*. Vol. 24(6), 2084-2120.

Gruenberg, Martin J. (2012). Speech to Federal Reserve Bank of Chicago Bank Structure Conference (June 9).

Hardy, Daniel C. (2013). Bank Resolution Costs, Depositor Preference, and Asset Encumbrance. IMF Working Paper 13/172, available at <http://www.imf.org/external/pubs/ft/wp/2013/wp13172.pdf>

Huertas, T. F. (2013). The Case for Bail-ins. In Kenadjian, P. S., Ed. *The Bank Recovery and Resolution Directive*, De Gruyter, e-book.

Kovner, A., Vickery, J., Zhou, L. (2014). Do Big Banks Have Lower operating Costs? Federal Reserve Bank of New York, *Economic Policy Review*, Vol. 20, Special Issue: Large and Complex Banks (March).

KPMG, (2012). Bail-in liabilities: Replacing public subsidy with private insurance. Available at <http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/Documents/bail-in-debt-practical-implications.pdf>

Li, Z., Qu, S., Zhang, J. (2013). Quantifying the Value of Implicit Government Guarantess for Large Financial Institutions. Moody's Analytics Quantitative Research Group (January).

McAndrews, J., Morgan, D.P., Santos, J., and T. Yorulmazer, (2014), What Makes Large Bank Failures so Messy and What to Do about It, Federal Reserve Bank of New York, *Economic Policy Review*, Vol. 20, Special Issue: Large and Complex Banks (March).

Micossi, S., Bruzzone, G., Casella, M. (2014). Bail-in Provisions in State Aid and Resolution Procedures: Are they consistent with systemic stability? CEPS Policy Brief, No. 318 (May).

Miles, David, Yang, Jing, Marcheggiano, Gilberto (2011). Optimal Bank Capital. Bank of England, External MPC Unit, Discussion Paper 31, available at <http://www.econstor.eu/obitstream/10419/50643/1/656641770.pdf>

Morgan, D. P., Stiroh, K. J. (2005). Too Big To Fail After All These Years. Federal Reserve Bank of New York Staff Reports, no 220 (September).

PWC, (2013). PwC's Financial Services Regulatory Brief, Basel & prudential standards: US moving faster than world.

Randell, C. (2011). The Great British Banking Experiment –Will the Restructuring of UK Banking Shows us How to Resolve G-SIFIS? Paper prepared for the LSE Financial Markets Group Conference on "Banking Structure, Regulation and Competition" (November).

Santos, J. (2014). Evidence from the Bond Market on Banks' "Too-Big-To-Fail" Subsidy. Federal Reserve Bank of New York, Economic Policy Review, Vol. 20, Special Issue: Large and Complex Banks (March).

Schoenmaker, D. (2014). A fiscal backstop to the banking system. Mimeo (June).

Skeel, D. A. (2014). Single Point of Entry and the Bankruptcy Alternative. [U of Penn. Inst for Law & Econ Research Paper No. 14-10](#) (February).

Sommer, J. H. (2014). Why Bailin? And How? Federal Reserve Bank of New York, Economic Policy Review, Vol. 20, Special Issue: Large and Complex Banks. (March).

Tucker, P. (2014). Regulatory Reform, Stability and Central Banking. Hutchins Center on Fiscal and Monetary Policy, Brookings, 18 January, available at www.brookings.edu/~media/research/files/papers/2014/01/16%20regulatory%20reform%20stability%20central%20banking%20tucker/16%20regulatory%20reform%20stability%20central%20banking%20tucker.pdf

Ueda, K, Weder Di Mauro, B. (2011). Quantifying the Value of the Subsidy for systemically Important Financial Institutions. IMF Working Paper 12/128.